

REMARKS/ARGUMENTS

Claims 1-8, 11-21, 23, 24, 27, and 28 are currently pending in this application, with Claims 14-21 having previously been withdrawn. By the foregoing amendment, the withdrawn Claims 14-21 have been canceled without prejudice or disclaimer, Claims 1 and 28 have been revised, and new Claim 29 has been added to afford the applicant the breadth and scope of patent protection to which he is entitled. Accordingly, Claims 1-8, 11-13, 23, 24 and 27-29 are now present in this application for consideration and allowance.

In the July 9, 2007 Office Action the Examiner made the following claim rejections which are respectfully traversed for reasons subsequently set forth herein.

1. Claims 1-8, 11, 12, 23, 24, 27 and 28 currently stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent 6,190,414 to Young et al in view of U.S. Patent 6,277,123 to Maroney et al; and
2. Claim 13 currently stands rejected under 35 USC §103(a) as being unpatentable over Young et al in view of Maroney et al, further in view of U.S. Patent Publication No. 2003/0229355 of Keller.

1. The 35 USC §103(a) Rejection of Claims 1-8, 11, 12, 23, 24, 27 and 28 as Unpatentable Over Young et al in view of Maroney et al

Via independent Claim 1, each of applicant's Claims 1-8, 11 and 12 is directed to an apparatus for installing a vertebral implant assembly, having a tubular body and a pair of endplate assemblies, between two vertebral endplates. Each of these claims specifies, among other things, an engager device connected to a recited set of gears in turn connected to a proximal end of an axle. As claimed, the engager device comprises a positioning mechanism including a pair of movable arc portions **having substantially smooth opposing side surfaces** adapted to at least partially surround **and slidably engage** the tubular body as the tubular body is rotated within the surrounding arc portions by the engager device.

The Examiner acknowledges that Young et al fails to disclose this claimed positioning mechanism with its movable arc portions, but contends that it would be obvious to one of ordinary skill in the art to incorporate the Maroney et al pivotal arcuate arms 21 (see FIGS 1, 6 and 7 of Maroney et al) into the apparatus of Young et al to meet the limitations of Claims 1-8, 11 and 12. For at least the following reasons it would not be obvious to one of ordinary skill in this art to make this Examiner-proposed combination of the Young et al and Maroney et al references.

First, it should be noted that the pivotal arcuate arms 21 shown in Maroney et al have configurations quite similar to the serrated jaws of a pair of pliers used to tenaciously grip an object and keep it from moving. Indeed, the serrated facing surfaces of the opposed Maroney et al arcuate arms 21 are designed to grip a bone and **preclude** rotation of the bone relative to the arms 21 during a surgical procedure. In sharp contrast, the tubular member 142 in Young et al must **rotate** relative to the vertebrae V_1 and V_2 (see FIG. 14 of Young et al) to effect the requisite upward movement of the threaded jack screw 140 during the associated surgical procedure. Thus, Maroney et al is seen to teach **directly away from** the use of its plier-like, motion precluding jaws 21 in the Young et al apparatus as proposed by the Examiner. Because of this direct teaching away in Maroney et al, one of ordinary skill in this particular art would have no reason to even consider this Examiner-proposed modification of the Young et al structure.

Second, if the Maroney et al serrated arms 21 were incorporated in the Young et al apparatus, and used to grippingly engage the Young et al tubular member 142 during operative rotation of the shaft 120, the serrated arms 120 would clearly interfere with the intended relatively free rotation of the tubular member 142, thereby unquestionably making the Young et al apparatus less suitable for its intended purpose. This diminished suitability is, of course, antithetical to combinative obviousness.

Third, even if the Maroney et al serrated arms 21 were to be incorporated in the Young et al apparatus, the resulting Young et al structure would not meet the limitations in the present applicant's Claims 1-9, 11 and 12 because such claims require "a pair of movable arc portions **having substantially smooth opposing side surfaces** adapted to at least partially surround **and slidably engage** the tubular body as the tubular body is rotated within the surrounding arc portions by the engager device." The Maroney et al serrated arms 21 do not have these claimed structural and functional characteristics.

For at least these reasons, it is respectfully submitted that Claims 1-8, 11 and 12 are patentably distinguishable over the Young et al and Maroney et al references, whether such references are considered singly or in any combination thereof.

Via independent Claim 28, each of applicant's Claims 28, 23, 24 and 27 specifies:

An instrument for installing a vertebral implant within a vertebral column, the instrument comprising:

an axle defining a first axis and having a proximal end and a distal end, the axle adapted to rotate about the first axis;

a first gear connected to the axle and adapted to rotate about the first axis;

a second gear engaged with the first gear and adapted to rotate about a second axis generally perpendicular to the first axis;

a toothed section fixedly attached and coaxially aligned with the second gear **for conjoint rotation therewith about the second axis**, the toothed section including a plurality of circumferentially spaced teeth,

wherein the circumferentially spaced teeth are **configured to be received in side wall openings in** a tubular body portion of the vertebral implant bounded between a pair of endplates, and

wherein rotation of the axle is, **via rotation of the circumferentially spaced teeth received in the tubular body side wall openings, operative** to rotate the tubular body relative to the pair of endplates.

Representatively, but not by way of limitation, the claimed “toothed section” may be the member 86 shown in FIGS. 2 and 5 of the present applicant’s drawings. Young et al does not disclose a toothed section as recited in Claims 28, 23, 24 and 27. Specifically, neither of the gear-shaped structures 136 and 156 shown in Young et al has a separate toothed section fixedly secured thereto and having circumferentially spaced teeth configured to be received in side wall openings in the tubular member 142. This deficiency in Young et al is in no manner cured by Maroney et al which has been cited by the Examiner solely for its alleged teachings regarding a positioning mechanism with selectively pivotable arc portions. It is thus respectfully submitted that Claims 28, 23, 24 and 27 are patentably distinguishable over the Young et al and Maroney et al references, whether such references are considered singly or in any combination thereof.

2. The 35 USC §103(a) Rejection of Claim 13 as Unpatentable Over Young et al in view of Maroney et al, Further in View of Keller

Claim 13 depends from previously discussed allowable Claim 1, and is thus seen to be allowable over the Young et al and Maroney et al references for the various reasons previously discussed herein with respect to Claim 1. As previously pointed out to the Examiner, Keller is not an available prior art reference with respect to the instant application. Specifically, the instant application claims priority to U.S. Provisional Application No. 60,412,730 filed on September 23, 2002 which fully supports the pending claims. As such, the Keller reference, filed February 5, 2003, is not available prior art with respect to the instant application, and the rejection as to Claim 13 should be withdrawn. Even if the Keller reference was available prior art, it would not cure the above-discussed deficiencies in Young et al and Maroney et al, having been cited by the Examiner solely for its alleged teachings with respect to parallel alignment structure.

3. New Claim 29

New Claim 29 is directed to an apparatus for installing a vertebral implant assembly, having a tubular body with side wall openings therein and a pair of end plate assemblies between two vertebral endplates. The claimed apparatus is specified as comprising:

an axle having a proximal end and a distal end;

a set of gears connected to the proximal end of the axle; and


an engager device separate from the set of gears and fixedly secured to one of the gears for conjoint rotation therewith, the engager device having a circumferentially spaced plurality of generally cog-shaped projections configured for receipt in the tubular body side wall openings so that rotation of the axle, via the set of gears, drivingly rotates the tubular body relative to the end plate assemblies.

Neither Young et al nor Maroney et al discloses an engager device which (1) is separate from a set of gears, (2) is fixedly secured to one of the gears for conjoint rotation therewith, and (3) has a circumferentially spaced plurality of generally cog-shaped projections configured for receipt in side wall openings of a tubular body. It is thus respectfully submitted that new Claim 29 is patentably distinguishable over Young et al and Maroney et al, whether these two references are considered singly or in any combination thereof.

In view of the foregoing amendment, remarks and arguments, all of the claims currently pending in this application are now seen to be in a condition for allowance. A Notice of Allowance of Claims 1-8, 11-13, 23, 24 and 27-29 is therefore earnestly solicited.

The Examiner is hereby requested to telephone the undersigned attorney of record at 972/739-8640 if such would further or expedite the prosecution of the instant application.

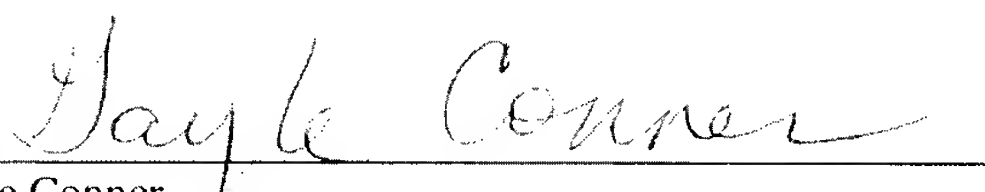
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